

REMARKS

Claims 1-3 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tsunoda in view of Kraft; claims 4 and 8-10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tobin in view of Tsunoda; and claims 5-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tobin in view of Tsunoda as applied to claim 4, and further in view of Kraft.

The Tsunoda patent (5,698,464) discloses a process of damaging a silicon oxide layer using x-rays and then annealing in a nitrogen containing species. The Tsunoda patent teaches that without the x-ray damage the nitrogen incorporated is about 1% but with the damage the nitrogen incorporated is about 4% (col. 3, lines 5-16 and Figure 6). The Tsunoda patent **does not** teach forming a film with a uniform concentration as stated and relied upon by the examiner. The scale shown in Figure 6 is qualitative and therefore meaningless as a measure of the absolute nitrogen concentration in the film. Furthermore it is not disclosed anywhere in the text of the Tsunoda patent that a film of uniform nitrogen concentration is formed. If such a statement exists in the Tsunoda patent then the examiner is requested to point out with particularity the section of the Tsunoda patent where the statement exists. There is no such statement in the Tsunoda patent.

The examiner in responding to applicants arguments states that, "[A]lso, as shown in Fig. 6, the nitrogen concentration is 4 atomic percent along the dielectric layer, therefore uniform as taught if Fig. 3e of the claimed invention." The examiner is invited to examine Fig. 6 in the Tsunoda patent. The x-axis is labeled "depthwise of silicon oxide film". The y-axis is labeled "nitrogen concentration." Applicant is sure that the examiner is aware that each point on the y-axis represents a different nitrogen concentration with the arrow indicating increasing nitrogen concentration. The examiner is now invited to examine the lines labeled C₁ and C₂. From point B₁ to point B₂ the lines are non-linear indicating that each point on the line represents a different nitrogen concentration. This is the only sensible interpretation of Fig. 6 in the Tsunoda patent.

The nonlinearity of the concentration versus depthwise in the dielectric clearly teaches a non-uniform nitrogen concentration in the dielectric. This should be compared with Fig. 3e of the instant invention where a straight line is shown indicating uniform nitrogen concentration. The Tsunoda patent clearly teaches a non-uniform nitrogen concentration and away from the uniform nitrogen concentration claimed in the claims of the instant invention. The Tsunoda patent cannot therefore be properly combined with the Kraft et al. patent or the Tobin et al. patent to properly read on any of the claims in the instant disclosure.

Claim 1 is therefore allowable over the cited art. Claims 2 and 3 that depend from claim 1 are also allowable. In forming the rejection for claim 4 the examiner relies on the idea that the Tsunoda patent teaches a uniform nitrogen concentration. As shown above the Tsunoda patent does not teach a uniform concentration and claim 4 is allowable over the cited art. Dependent claims 8-10 depend from claim 4 and are also allowable over the cited art. In forming the rejection for claims 5-7 the examiner relies on the idea that the Tsunoda patent teaches a uniform nitrogen concentration. As shown above the Tsunoda patent does not teach a uniform concentration and claims 5-7 are allowable over the cited art.

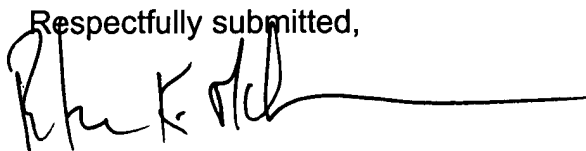
In light of the above, it is respectfully submitted that the present application is in condition for allowance, and notice to that effect is respectfully requested.

While it is believed that the instant amendment places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

To the extent necessary, Applicant petitions for an Extension of Time under 37 CFR 1.136. Please charge any fees in connection with the filing of this paper, including

extension of time fees, to the deposit account of Texas Instruments Incorporated,
Account No. 20-0668.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Peter K. McLarty", followed by a long horizontal line extending to the right.

Peter K. McLarty
Attorney for Applicant
Reg. No. 44,923

Texas Instruments Incorporated
P.O. Box 655474, MS 3999
Dallas, TX 75265
(972) 917-4258